Lewis County Public Works

Local Road Safety Plan

LEWIS COUNTY

Washington's First County

est. 1845

Developed June 2014

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3. Overview:

The Lewis County Department of Public Works used the concepts discussed in the FHWA Systemic Safety Project Selection Tool to develop a Local Road Safety Plan. The development of a Local Road Safety Plan is intended to increase local roadway safety and to develop and implement road safety improvements to reduce fatalities and injuries on local public roads. A Local Road Safety Plan is a way to prioritize locations for improvements based upon data. The county's summary data, provided by WSDOT, was used as a starting point to identify possible priority crash categories (such as: hit fixed object crashes, night time crashes, crashes on 50 mph roads, crashes on horizontal curves, etc.). The full county's crash dataset from the County Road Administration Board's (CRAB) Mobility database, traffic data from Vias, and GIS mapping of identified crash locations were used to more closely identify the criteria that would be used to identify specific locations or corridors of concern. Scores applied to these criteria were used to further identify roads and corridors for prioritization and implementation of countermeasures, as part of the county's Local Road Safety Plan.

4. Contact:

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5. Focus Crash Type:

The focus crash type was identified based on a review of serious injury and fatal crash data from the "2008-2012 Lewis County Data" spreadsheet, provided by WSDOT, and a compilation of all Lewis County crash data from the County Road Administration Board's (CRAB) Mobility database and our own GIS mapping. Serious injury and fatal crash data show that the two major crash types are: Hit Fixed Object (62.7%) and Overturn/Rollover (16.7%). The data also indicates the locations of a majority of these crashes are by junction relationship-Non-Intersection Related (85.3%), and by roadway curvature-Horizontal Curve (50%). The committee then reviewed county crash data from Mobility for Hit Fixed Object and Overturn/Rollover type crashes and found that "Ran off the Road" was the sequence of events listed for the vast majority of these crash types. The listing of objects struck includes: Roadway Ditch (30.52%), Tree or Stump (stationary) (14.58%), Fence (10.01%), Utility Pole or Box (9.35%), Earth Bank or Ledge (8.81%), Over Embankment - No Guardrail Present (8.32%), Mailbox (4.16%), etc., further indicating "Ran off the Road" type crashes. After evaluation of this data, the committee determined that roadway departure (Ran off the Road) crashes would be the focus crash type of this safety plan.

6. Focus Facility Type:

It was determined that the entire county roadway system, with a focus on corridors, would be considered for safety improvements. The primary focus will be on Federal-Aid roadways, and then Local Access roads, where right-of-way or permitting does not constrain us from completing low-cost widespread safety fixes covering significant miles of the county roadway network. The areas where right-of-way and permitting are identified as an issue that currently prevents the installation of countermeasures in an economically or timely fashion will be addressed as the County has funding and staff time available.

7. Identified Risk Factors:

The risk factors identified as the key factors in identifying roadways and corridors where potential countermeasures may reduce the number of roadway departure crashes are as follows:

- Federal Functional Classification
- Average Daily Traffic
- 85th Percentile Speed
- Weighted Crashes/Mile
- Number of Ran off the Road Crashes/Mile
- Number of Overturn/Rollover Crashes/Mile
- Horizontal Curve Density
- Roadway Width Deficiency
- Accidents per Million Vehicles Miles (vs. statewide rate for all counties)
- Number of Fatalities

8. Identified Countermeasures:

The countermeasures identified as having the potential for reducing the severity and occurrence of roadway departure crashes includes:

- Slope Flattening
- Fixed Object Removal
- Guardrail
- Concrete Traffic Barriers
- Enhanced Curve Delineation
- Delineation of Roadside Objects (Trees, Utility Poles, etc.)
- Enhanced Pavement Markings
- Shoulder Rumble Strips
- Mid-Lane Rumble Strips
- Shoulder Widening
- Pavement Safety Edge
- Flexible Guideposts
- Culvert End Treatment
- Skid-Resistant Pavement Surfaces
- Improved Design of Roadside Hardware (e.g., Bridge Rail)
- Clear Zone Widening
- Improved Curve Geometry
- Reduction of Pavement Edge Drop-Offs
- Improve Ditch Sections
- Upgrade Traffic Signs

9. Prioritization of Roadways/Corridors:

The prioritization of roadways and corridors for safety countermeasures was completed by using a balance of quantitative analysis and input from Public Works staff. The quantitative analysis was completed by developing a priority ranking tool that assigns a point value to each of the ten identified risk factors. Data was collected for each risk factor and entered into the priority ranking tool (spreadsheet), analyzed to determine the range where points are assigned, and then assigned points derived from a series of formulas in the priority ranking tool. Each risk factor was assigned a point value between 0 and 10, giving each roadway or corridor a potential total score of 100. Public Works staff then analyzed the top ranking locations and provided their input based on knowledge of the roadway system, countermeasures already in place, and whether permitting or right-of-way issues prevent the installation of safety countermeasures. The top ranking roadways were then further analyzed to determine if any safety improvements had recently been installed or constructed that may have changed the risk factors, and the roadway was further analyzed into smaller finite sections to target needed improvements.

(Priority Ranking Tool – Scoring Results, *page 7*)

Priority Ranking Tool - Scoring Results

Signifies: Corridor

Rank	Road No.	Road Name (Corridor)		FFC	Avg. ADT	Avg. 85th	Weighted Accidents per Mile	Run Off Road per Mile	Overturned Roll Over per Mile	Curve Density	Width & Shoulders	APMVM	Fatalities	Total (100 possible)
1	40098	SHOREY RD		8	8	6	10	10	10	4	10	8	0	74
2	93008	WEST SIDE HWY		10	10	6	10	10	6	6	10	4	0	72
3	94006	RUSH RD		9	10	6	10	10	6	2	10	8	0	71
4	91005	COAL CREEK RD		10	8	6	10	10	8	6	6	6	0	70
5	92008	HWY 603		10	10	8	10	8	6	2	8	2	5	69
5	93004	HWY 603		10	10	8	10	8	6	2	8	2	5	69
5	93006	HWY 603		10	10	8	10	8	6	2	8	2	5	69
6	10021	COOKS HILL RD		8	4	6	10	10	6	8	6	8	0	66
7	15052	CENTRALIA ALPHA RD		10	6	8	10	6	6	2	6	6	5	65
7	94001	CENTRALIA ALPHA RD		10	6	8	10	6	6	2	6	6	5	65
7	96001	CENTRALIA ALPHA RD		10	6	8	10	6	6	2	6	6	5	65
8	91013	GALVIN RD		9	10	6	10	8	10	2	6	4	0	65
9	91000	HARRISON AVE		10	10	6	10	10	6	0	6	2	4	64
10	91011	REYNOLDS AVE		10	10	6	10	10	6	0	10	2	0	64
11	95000	JACKSON HWY S		10	10	8	10	8	6	6	0	4	1	63
12	94014	LEONARD RD		10	10	8	8	6	4	2	10	2	1	61
13	23650	CURTIS HILL RD		7	10	4	10	10	10	6	0	2	0	59
14	40077	LOGAN HILL RD		6	8	6	10	8	10	2	4	4	0	58
15	94000	JACKSON HWY		10	10	6	10	8	4	2	2	2	3	57
15	95002	JACKSON HWY		10	10	6	10	8	4	2	2	2	3	57
16	30062	N MILITARY RD		10	8	8	10	8	6	0	0	6	1	57
17	24021	TWIN OAKS RD		8	6	6	8	6	6	6	4	6	1	57
18	14030	SCHEUBER RD S		6	10	6	10	10	10	0	0	4	0	56
19	40021	SOMMERVILLE RD		6	10	8	10	10	4	0	4	4	0	56
20	30064	S MILITARY RD		8	2	6	10	6	4	6	4	8	0	54
21	40023	ROGERS RD		6	4	4	10	8	0	10	0	10	0	52
22	15051	SALZER VALLEY RD		8	6	6	6	6	6	6	4	4	0	52
22	91007	SALZER VALLEY RD		8	6	6	6	6	6	6	4	4	0	52
23	62850	SWOFFORD RD		8	4	6	10	6	0	10	4	4	0	52
24	95005	TOLEDO VADER RD		10	10	8	10	4	4	4	0	2	0	52
25	93000	WINLOCK VADER RD		10	10	6	8	4	6	0	8	0	0	52
26	30081	AVERY RD W		8	10	6	8	6	6	0	4	2	0	50
27	94008	BISHOP RD		10	10	6	10	4	2	4	2	2	0	50
28	30221	RHOADES RD		6	2	6	8	8	4	6	2	8	0	50
29	95003	TUCKER RD		10	8	8	4	4	2	4	6	2	2	50
30	78609	DAVIS LAKE RD		10	4	6	4	4	2	8	4	6	1	49
31	13022	ESHOM RD		7	10	2	8	6	4	0	6	6	0	49
31	91016	ESHOM RD		7	10	2	8	6	4	0	6	6	0	49
32	17901	BIG HANAFORD RD		8	4	6	6	4	4	6	0	8	2	48
32	91019	BIG HANAFORD RD		8	4	6	6	4	4	6	0	8	2	48
33	18412	HILLVIEW RD		6	2	0	10	10	10	0	0	10	0	48
34	45013	KOONTZ RD		9	8	6	8	6	2	2	2	4	1	48
34	93001	KOONTZ RD		9	8	6	8	6	2	2	2	4	1	48
35	10019	LINCOLN CREEK RD		8	2	6	4	4	2	10	4	4	3	47
35	91015	LINCOLN CREEK RD		8	2	6	4	4	2	10	4	4	3	47
36	24038	PLEASANT VALLEY RD		8	4	8	6	4	4	4	4	4	1	47
36	30100	PLEASANT VALLEY RD		8	4	8	6	4	4	4	4	4	1	47
37	40076	DEVEREESE RD		6	10	6	4	4	4	6	2	4	0	46
38	16850	HALLIDAY RD		6	2	4	6	6	2	10	0	10	0	46
39	30061	NEVIL RD		6	8	6	10	4	6	2	2	2	0	46
40	13002	SCHEUBER RD N		10	6	2	10	6	0	0	4	8	0	46
41	92004	WILDWOOD RD		10	2	8	4	2	2	6	2	6	4	46
41	93003	WILDWOOD RD		10	2	8	4	2	2	6	2	6	4	46
42	60069	WINSTON CREEK RD		8	4	8	4	4	4	6	2	4	1	45
43	10026	INGALLS RD		8	2	6	4	2	2	6	6	6	2	44
44	40096	INTERSTATE AVE		10	10	6	10	2	2	4	0	0	0	44
45	17151	LITTLE HANAFORD RD		7	4	6	6	4	4	6	2	4	1	44
45	91003	LITTLE HANAFORD RD		7	4	6	6	4	4	6	2	4	1	44
46	60070	SALMON CREEK RD		6	2	6	2	2	4	10	4	8	0	44
47	61083	MOSSYROCK RD E		8	10	8	6	0	0	0	10	0	1	43
48	91026	AIRPORT RD		8	6	6	4	2	0	4	10	2	0	42
49	92006	BOISTFORT RD		10	8	8	6	2	2	4	2	0	0	42
50	79660	MINERAL HILL RD		6	2	4	4	4	4	10	4	4	0	42

10. Prioritization of Countermeasures:

The prioritization of countermeasures for the identified roadways and corridors was determined by Public Works staff. The countermeasures chosen are intended to maximize the safety benefits of this funding, based on the prevalent accident type, and provide widespread safety solutions that can be implemented to reduce fatalities and serious injuries. We have chosen Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section as the most effective combination of safety improvements to reduce the number and severity of roadway departure crashes.

11. Project Submittal:

After identifying the roadways/corridors and cost-effective countermeasures, Public Works staff compiled the following listing of projects for submittal for funding consideration:

Priority #1 Location: All Top-20 ranked roads listed on page 7 of Lewis County's Local Road Safety Plan/Mileage – 54 miles /☆☆☆☆☆/PE = $11,637, CN = $96,975

1. Countermeasure Description: Flexible Guideposts (*unless previously installed*)

Priority #2 Location: Shorey Road, #40098/MP 0.334 – 2.854/☆☆☆☆☆/PE = $14,699, CN = $122,490

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #3 Location: Rush Road, #94006/MP 2.601 – 3.913/☆☆☆☆☆/PE = $11,099, CN = $92,490

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #4 Location: Coal Creek Road, #91005/MP 0.394 – 4.615/☆☆☆☆☆/PE = $41,525, CN = $346,044

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #5 Location: Hwy 603, #92008, #93004, & #93006/MP 0.000 – 13.418/☆☆☆☆☆/PE = $3,395, CN = $28,296

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #6 Location: Cooks Hill Road, #10021/MP 1.433 – 4.347/☆☆☆☆☆/PE = $12,439, CN = $103,662

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #7 Location: Centralia Alpha Road, #15052, #94001, & #96001/MP 0.000 – 18.288/☆☆☆☆/PE = $5,136, CN = $346,044

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #8 Location: Galvin Road, #91013/MP 1.184 – 2.054/☆☆☆☆/PE = $5,310, CN = $44,250

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #9 Location: Reynolds Road, #91011/MP 0.099 – 0.993/☆☆☆☆/PE = $21,870, CN = $182,250

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #10 Location: Jackson Hwy S, #95000/MP 0.000 – 5.391/☆☆☆☆/PE = $5,136, CN = $42,798

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #11 Location: Leonard Road, #94014/MP 0.000 – 3.160/☆☆☆☆/PE = $7,453, CN = $62,112

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #12 Location: Logan Hill Road, #40077/MP 0.000 – 4.919/☆☆☆/PE = $77,900, CN = $649,170

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #13 Location: Jackson Hwy, #94000 & #95002/MP 0.257 – 16.493/☆☆☆/PE = $42,379, CN = $353,166

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #14 Location: N Military Road, #30062/MP 0.000 – 5.790/☆☆☆/PE = $6,581, CN = $54,846

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #15 Location: Twin Oaks Road, #24021/MP 0.000 – 3.396/☆☆☆/PE = $18,649, CN = $155,406

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #16 Location: Scheuber Road S, #14030/MP 0.505 – 5.162/☆☆☆/PE = $78,093, CN = $650,766

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #17 Location: Sommerville Road, #40021/MP 0.000 – 0.894/☆☆/PE = $18,906, CN = $157,554

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

Priority #18 Location: S Military Road, #30064/MP 0.000 – 6.200/☆☆/PE = $3,660, CN = $30,498

1. Countermeasure Description: Slope Flattening, Culvert End Treatment, Shoulder Widening, Guardrail, Improved Design of Roadside Hardware (e.g., Bridge Rail), Upgrading Traffic Signs, Clear Zone Widening, Reduction of Pavement Edge Drop-offs, and Improve Ditch Section.

It was determined that three roads (#93008-West Side Hwy, #91000-Harrison Ave, #23650-Curtis Hill Road) in the Top-20 of the county's Local Road Safety Plan would not be programmed for safety countermeasures. This determination was made based on:

- The presence of the necessary countermeasures to avoid roadway departure crashes.
- In the case of Harrison Ave., it is on the county's current TIP and will be reconstructed with a center turn-lane that will reduce the number and frequency of rear-end crashes, which is the prevalent crash type on this road.